is either heat cured by a resistive heater **132**, chemically cured or simply allowed to set depending upon the selected material **119**.

In another embodiment, hydrophilic contact lens blank is impregnated with a liquid crystal material and placed in operative relation with the electrodes **130**. The liquid crystal is thus oriented in accordance with the field and a lens power established. It may also be possible to deposit the mold material directly in the eye as a liquid film, and apply a low power electric field directly to the film to produce a contact lens which may be worn for an indefinite period and disposed of.

It is intended that the components be made as light weight as possible. For example, the envelope or structural components described herein may be formed of various organic or inorganic materials including gels. Such materials may be hermetically sealed, depending on their intended use.

In yet another embodiment, the present invention may include a wireless receiver for receiving control signals from a remote control device. Such a system may provide a miniaturized interactive game or display device, and may be in the form of a non-invasive or temporarily inserted device, e.g., a contact-like lens.

It will now be understood that the present invention comprises an adjustable power lens system having an optically active molecular material. Various novel embodiments have been disclosed that exhibit features not shown in the prior art. Thin film construction, integrated lens and control, multi-element configuration, gradient inducing addressable control signal matrices, contact lens configurations, curable material fabrication, multiple element complex lens and shutter combinations and variable cylinder power and axis, prism power and axis, light and color in addition to sphere.

Those having ordinary skill in the relevant arts will now apprehend various modifications and/or additions to the invention herein disclosed. By way of example, other lens configurations and control schemes, as well as other optically active materials will, as a result of the teaching herein, now come to mind. However, such modifications and additions are contemplated as being within the scope of the invention which is limited only by the claims appended hereto.

I claim:

1. A variable lens comprising:

a variable power optical device including an optically active lens responsive to an energy stimulus for changing the power of the lens;

control means for controlling the energy stimulus;

a source of energy for generating the energy stimulus for driving the control means and the lens;

a substrate for housing the lens, control means and energy source, each integrally deposited on the substrate.

2. The lens as set forth in claim **1** wherein the energy stimulus is an electrical field and further including a plurality of transparent grid electrodes deposited on the substrate and responsively coupled to the control means, said electrodes forming a matrix of addressable locations for producing a gradient electric field of electric potential across said lens, whereby a gradient in the refractive power of said lens is produced.

3. The lens of claim **2** wherein said electrodes are formed of opposed spaced grid electrodes, intersecting in projection, for producing the addressable locations.

4. The lens of claim **2** wherein said substrate comprises at least two opposed plates of glass microsheet having at least one of said spaced electrodes deposited on each of opposed adjacent faces of the plates, and said control means and power source being deposited on at least one of said plates.

5. The lens of claim **2** wherein said control means comprises a microprocessor and further including a set of gates deposited on said substrate, said gates coupled to said microprocessor, power source and electrodes for gating power from said power source to said electrodes in accordance with selected output of said microprocessor.

6. The lens of claim **2** wherein said electrodes are spaced up to about 100 microns apart.

7. The lens of claim **2** wherein the electrode is a transparent conductive material selected from the group consisting of indium oxide and tin oxide.

8. The lens of claim **1** wherein said lens system is hermetically sealed within an encapsulating material.

9. The lens of claim **8** wherein said encapsulating material is bio-compatible inert material.

10. The lens of claim **1** wherein the lens further includes one of a light diode and color correcting cell.

11. The lens of claim **1** wherein said lens includes at least one of a nematic and cholesteric liquid crystal material therein.

12. The lens of claim **1** wherein the optically active material is a thin film layer of said material of about 5 to 100 microns thick.

13. The lens of claim **1** wherein the energy supply is capable of generating the energy required to drive the system for a period of years.

14. The lens of claim **1** being sized for insertion into the eye of a human.

15. The lens of claim **1** wherein said lens is capable of varying its power from about +20 diopters to about −20 diopters and the control means requires as little as about 1 to about 100 nanoAmps of current.

16. The variable lens recited in claim **1** wherein said energy stimulus is at least one of the following: electric field, magnetic field, electromagnetic field, light field, sonic field, radiation field.

17. A lens system comprising: a plurality of closely spaced electrodes having addressable pairs of discrete locations, means for addressably impressing on each said electrode pair electric energy of a selected amount thereby producing different electrical fields at different electrode pair locations, optically active material located in intimate relation with the electrodes and being responsive to the electric fields for producing a corresponding index of refraction in the active material at each respective location, and optically active material being configured in a relatively thin film of up to about 100 microns in thickness between said electrodes to thereby minimize the power necessary to drive the active material to the various indices of refraction, the different indices of refraction creating a gradient index of refraction across said system, the electrodes being in the form of a matrix of addressable dots.

18. A lens system comprising: a plurality of closely spaced electrodes having addressable pairs at discrete locations, means for addressably impressing on each said electrode pair electric energy of a selected amount thereby producing different electrical fields at different electrode pair locations, optically active material located in intimate relation with the electrodes and being responsive to the electric fields for producing a corresponding index of refraction in the active material at each respective location, said optically active material